III. REMARKS

Claims 1, 2, 6, 9, 10 and 12 are rejected under 35 U.S.C. as being unpatentable over U.S. 5,367,593 (Lebby et al.) in view of U.S. 5,923,691 (Sato). Applicant respectfully disagrees.

Claim 1 recites that the connector laser diodes (on the bare integrated circuit chip) are formed in a predetermined arrangement from a gallium arsenide substrate and deposited on the bare integrated chip by transfer from an intermediate support that maintains the predetermined arrangement and that the connector defines a base unit link. The features recited in claim 1 are not disclosed or suggested in neither Lebby, nor Sato.

Both Lebby and Sato have been addressed at length in Applicants' responses filed in priority application 09/936,951, and the arguments presented in those responses are incorporated by reference herein. The Applicant further notes the following.

In the Action, the Examiner appears to agree that neither Lebby nor Sato disclose or suggest the laser diodes being formed in a predetermined arrangement from a gallium arsenide substrate and deposited on the (bare) IC chip by transfer from an intermediate support that maintains the predetermined arrangement (as called for in claim 1). Nevertheless, the Examiner dismisses the patentable weight of this language. It appears, from the Action, that the Examiner views the aforementioned language in claim 1 merely as process language and no more, and hence, attributes it no patentable weight. This is incorrect. The Examiner appears to fail to consider the structural elements that arise from (i.e. are defined by) the language in claim 1 (i.e. "that the laser diodes are formed in a predetermined arrangement from a gallium

arsenide substrate and deposited on the bare IC chip by transfer from an intermediate support that maintains the predetermined arrangement". This language is not mere process language, but in fact defines structural features of the connector, and it is these features (not just the process language) that simply are not present or suggested in the disclosure of Lebby and Sato.

As noted before, and described in the specification of the present application, on page 4, lines 18-21, "the direct transfer (i.e. with the intermediate support that maintains the predetermined arrangement of the diodes) makes it possible to overcome the need for a printed circuit or a hybrid circuit which, in the prior art, enables the association of the laser diodes and the various electronic circuits needed to make them work". In contrast, in col. 3, lines 25-29, Lebby discloses that the IC chip 50 is a printed circuit board or hybrid circuit (thereby allowing photonic components to be formed on the IC chip, col. 4, lines 42-43). Thus, the Lebby connector has the exact structure overcome by the connector called for in claim 1. The claimed features enable use of a bare IC chip with laser diodes thereon without having to use a printed circuit board or hybrid circuit structure as disclosed in Lebby. Having laser diodes on the bare IC chip that is the bare control and emission detection chip (as made possible and defined by the process language in claim 1) is structurally different than laser diodes on a small printed circuit board or hybrid circuit as disclosed in Lebby. Thus, one structural difference (defined by subject language in claim 1) with the connector in Lebby is that the laser diodes according to claim 1 need not be on a printed circuit board or hybrid circuit as disclosed in Lebby. Another structural difference (defined by the language in claim 1, that the laser diodes are formed in a predetermined arrangement from a

substrate and deposited on the integrated circuit by transfer from an intermediate support that maintains the predetermined arrangement) is that the deposition of the laser diodes by transfer from the intermediate support that maintains the predetermined diode arrangement results in tighter tolerances on the location of the laser diodes, and lack of damage to other components on the chip from thermal or structural stress that may occur with conventional techniques of forming photonic components on a chip. These features of greatly improved tolerances on laser diode locations, and reduction or elimination of faults in the other components arising from conventional techniques, are structural differences with respect to conventional connectors. These features eliminate the potential for damage to components on the IC chip holding the laser diodes caused by either formation of the laser diodes on the chip (as disclosed in col. 4, lines 40-45 in Lebby) or conventional mounting techniques. These features also eliminate the tolerance variable (associated with manual or robotic positioning) of the laser diode arrangement. As may be realized, with conventional mounting techniques, picking and placement of the laser diodes (after formation) onto the IC chip introduces an additional set of tolerance variances (ultimately affecting the final or total accuracy of the laser diode arrangement), and it is this additional set of tolerance variances that is altogether eliminated by the features in claim 1. This is simply not disclosed or suggested in Lebby or Sato. Finally, the arrangement, of the laser diode as deposited on the IC chip is maintained from the arrangement during formation. This structural difference is also not disclosed or suggested in Lebby or Sato.

A Terminal Disclaimer is appended hereto for claims 1, 3-5 and 7.

For all of the foregoing reasons, it is respectfully submitted that all of the claims now present in the application are clearly novel and patentable over the prior art of record, and are in proper form for allowance. Accordingly, favorable reconsideration and allowance is respectfully requested. Should any unresolved issues remain, the Examiner is invited to call Applicants' attorney at the telephone number indicated below.

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Respectfully submitted,

11/24/04

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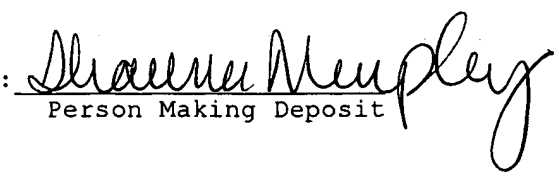
Signature: 
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